

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: George Paskalov

Application No.: 10/698,867

Group No.: 1753

Filed: 10/30/2003

Examiner: Edna Wong

For: High Energy Disinfection of Waste

**Mail Stop Appeal Briefs – Patents**

**Commissioner for Patents**

**P.O. Box 1450**

**Alexandria, VA 22313-1450**

**TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION--37 C.F.R. § 41.37)**

1. Transmitted herewith, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on October 29, 2007.

2. STATUS OF APPLICANT

This application is on behalf of a small entity.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:

small entity	\$255.00
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<b>Appeal Brief fee due</b>	<b>\$255.00</b>
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4. EXTENSION OF TERM

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee	\$255.00
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Extension fee (if any)	\$0.00
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<b>TOTAL FEE DUE</b>	<b>\$255.00</b>
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6. FEE PAYMENT

Authorization is hereby made to charge the amount of \$255.00 to Deposit Account No. 500341.

7. FEE DEFICIENCY

If any additional extension and/or fee is required, and if any additional fee for claims is required, charge Deposit Account No. 500341.

Date: 10/29/07

  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
GROUP ART UNIT 1753**

EXAMINER: Edna Wong  
APPELLANT: Paskalov et al.  
SERIAL NO: 10/698,867  
FILED: 10/30/2003  
FOR: High Energy Disinfection of Waste

MS Appeal Brief – Patents  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231  
Attention: Board of Patent Appeals and Interferences

**APPELLANT'S BRIEF UNDER 37 CFR §41.37**

This brief is filed with the appellant's Notice of Appeal filed in this manner on October 26, 2007.

The fees required under §1.17 and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains the following items under the headings in the order indicated:

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary Of Claimed Subject Matter
- VI. Ground of Rejection To Be Reviewed On Appeal
- VII. Argument
- VIII. Claims Appendix

IX. Evidence Appendix

X. Related Proceedings Appendix

**I. Real Party In Interest**

The real party in interest is the appellant, George Paskalov.

**II. Related Appeals and Interferences**

There are no other appeals or interferences in this matter known to appellant.

**III. Status of Claims**

1. Claims pending: 1-20;
2. Claims withdrawn: 1-11;
3. Claims rejected: 12-20;
4. Claims on appeal: 12-20.

**IV. Status of Amendments**

One amendment was filed after final rejection. The claims were rejected in the final Office Action mailed 8/22/2007 based on amendments entered in response to non-final Office Action mailed 3/26/2007. Section IX recites the claims as entered/pending and under final rejection.

**V. Summary Of Claimed Subject Matter**

The pending claims generally recite a method of reducing biological contamination in an amount of waste by exposing the waste to waves radiated by an RF plasma wave generator without subjecting the waste directly to the plasma generated by the generator. (See e.g. detailed descrip. P3/L21-28; P4/L22-26; P5/L4-8; Figure 1, numerals 130, 140, and 150) As the waste is carried past the waves radiated by the RF plasma wave generator, a substantial percentage of a microbe in the waste is inactivated or killed to produce treated waste. (See e.g. detailed descrip. P5/L4-9; P5/L22-P6/L12; Figure 1, numerals 130, 140, and 150) The waste can be treated in a

ship, and can be treated at a rate of at least 20 l/hr. (See e.g. detailed descrip. P4/L16-19; P5/L1-3) Once the waste is treated, it can be discharged into a navigable body of water, a sewer, or even a conduit in a municipal waste treatment plant. (See e.g. detailed descrip. P3/L22-24; P4/L16-18; P6/L1-2)

- A) **Independent Claim 12** recites a method of reducing biological contamination in an amount of waste, comprising:
- a) providing an RF plasma wave generator; (See e.g. detailed descrip. P3/L21-22; P3/L25-27; P5/L17-21; Figure 1, numeral 150)
  - b) carrying the waste past waves radiated by the RF plasma wave generator under conditions in which a substantial percentage of the population of a microbe in the waste is inactivated or killed, to produce a treated waste; and (See e.g. detailed descrip. P3/L22-23; P3/L25-27; P4/L22-26; P5/L4-9; P5/L22-P6/L12; Figure 1, numerals 130, 140, and 150)
  - c) without subjecting the waste directly to a plasma generated by the RF plasma wave generator. (See e.g. detailed descrip. P1/L2-5; P5/L4-8; Figure 1, numerals 130, 140, and 150)
- B) **Dependent Claim 15** recites the method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and discharging the treated waste into a navigable body of water. (See e.g. detailed descrip. P5/L1-3; P6/L1-2)
- C) **Dependent Claim 16** recites method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and discharging the treated waste into a sewer. (See e.g. detailed descrip. P3/L22-24; P4/L16-18; P5/L1-3)
- D) **Dependent Claim 17** recites the method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and discharging the treated waste into a conduit in a municipal waste treatment plant. (See e.g. detailed descrip. P3/L22-23; P4/L16-18; P5/L1-3; P6/L1-2)

E) **Dependent Claim 20** recites the method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and wherein the step of carrying the waste past the waves is carried out upon a ship. (See e.g. detailed descrip. P4/L16-19; P5/L1-3)

## **VI. Grounds Of Rejection To Be Reviewed On Appeal**

1. Rejection of claims 12-20 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

2. Rejection of claim 15-17 and 20 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

## **VII. Argument**

On **December 27, 2000**, the Applicant filed provisional application no. 60/258,208 for a Plasma Apparatus for Treatment of Water and/or Water Solutions.

On **December 20, 2001**, the Applicant then filed PCT patent application no. PCT/US01/49310 for Activated Water Apparatus and Methods, claiming priority to provisional patent application no. 60/258,208.

On **May 20, 2003**, the Applicant then filed application no. 10/432,208 for an Activated Water Apparatus and Methods, claiming priority to PCT patent application no. PCT/US01/49310.

On **October 30, 2003**, the Applicant then filed application no. 10/698,867 for a High Energy Disinfection of Waste. This application was a Continuation-In-Part of application no. 10/432,208.

On **January 18, 2007**, the Office issued a three-way restriction requirement on claims 1-19.

On **February 13, 2007**, the Applicant elected Group III, claims 12-19, without traverse. Applicant withdrew claims 1-11, and added claim 20.

On **March 26, 2007**, the Office issued an office action and rejected claims 12-20. The office also objected to the specification because the language used was informal.

Claims 12-14 and 18 were rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Laroussi (US 5,876,663). The Examiner rejected claims 12-14 and 18 because Laroussi teaches sterilizing a liquid by exposing it directly to plasma.

Claims 15 and 20 were rejected under 35 U.S.C. 103(a) as being obvious over Laroussi in view of Ubelhor (US 6,379,539 B1). The Examiner argued that it would have been obvious to treat waste on a ship and discharge the waste into a navigable body of water because Ubelhor teaches a water treatment system on a boat.

Claims 16, 17 and 19 were rejected under 35 U.S.C. 103(a) as being obvious over Laroussi. The Examiner argued that it would have been obvious to discharge treated waste into a sewer or a municipal waste treatment plant since Laroussi teaches water treatment systems of “municipalities.” The Examiner also argued that it would have been obvious to operate an RF plasma wave generator at a modulation frequency of 10-35 kHz because Laroussi teaches modulating the voltage of a plasma generator.

On **July 24, 2007**, the Applicant filed a response to the Office action dated March 26, 2007, amending the drawing, the specification, and claims 12, 15-17, and 20. The amendment to the drawing added view numbers that the specification referred to. The amendment to the specification formalized the words used in the specification with more acceptable synonyms. The amendment to claim 12 clarified that the claimed invention treats an amount of waste without subjecting the waste directly to the plasma. The amendments to claims 15-17 and 20 added a limitation that the waste be treated at a rate of at least 20 l/hr.

The Applicant argued that Laroussi teaches treating waste by subjecting it directly to the plasma, while the claimed invention teaches treating waste by only subjecting the waste to the waves of plasma. The Applicant also argued that Laroussi uses a steady-state glow discharge operating at 1-10 KHz, while the claimed invention operates at a basic frequency of 0.44 MHz – 40.56 MHz, or at a *modulation* frequency of 10-35 KHz. Lastly, the Applicant argued that the amended claims clarify that the claimed invention can treat waste at a rate of at least 20 l/hr, which Laroussi can not do.

On **August 22, 2007**, the Office issued a final office action, again rejecting claims 12-20. Claims 12-20 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner argued that the specification did not enable the limitation “without subjecting the waste directly to the plasma” and that the Applicant’s use of the term “the plasma” lacked antecedent basis. The Examiner also asked how microbes are killed without being subjected directly to the plasma, and if the plasma waves are the same as the plasma generated by the generator. Lastly, the Examiner argued that the relationship was unclear between the step of treating the waste at a rate of at least 20 l/hr and the step of carrying the waste past waves produced by the RF plasma wave generator.

On **September 26, 2007**, the Applicant filed a response after final, amending claim 12 to clarify that plasma waves are radiated by the plasma wave generator, and that the plasma generated by the plasma wave generator is not directly subjected to the waste. The Applicant argued that the specification teaches a substantially water-tight conduit, which separates the waste from the plasma wave generator and prevents the waste from being subjected directly to the plasma. The Applicant also explained how microbes can be killed by plasma waves without subjecting them directly to plasma. Lastly, the Applicant explained how the specification explains the relationship between the step of treating the waste at a rate of at least 20 l/hr and the step of carrying the waste past waves produced by the RF plasma wave generator.

On **October 3, 2007**, the Office issued an advisory office action and maintained its rejection of claims 12-20. The Examiner maintained that the specification does not enable the limitation “without subjecting the waste directly to the plasma” and that the relationship between the step of treating the waste at a rate of at least 20 l/hr and the step of carrying the waste past waves produced by the RF plasma wave generator is unclear.

On **October 26, 2007**, the Applicant filed a notice of appeal and this appeal brief.



## ARGUMENT

### **A. Rejection Of Claims 12-20 Under 35 U.S.C. §112, First Paragraph, As Failing To Comply With The Written Description Requirement.**

The Examiner argued that the limitation “without subjecting the waste directly to the plasma generated by the RF plasma wave generator” lacks literal basis in the specification as originally filed.

Literal basis of a limitation in the specification is not necessary. The proper test for a 35 U.S.C. §112 rejection is whether the specification reasonably conveys to one of ordinary skill in the art that the inventor had possession of the claimed invention as of the filing date. *See In re Kaslow*, 707 F.2d 1366 (Fed. Cir. 1983) (“The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.”)

The pending application is a CIP, which expressly incorporates the parent application, ser. no. 10/432,208 (“the ‘208 application”) by reference (Current Specification, P5/L20-21]). That parent application expressly teaches a quartz tube, which is a closed reactor (‘208 Specification para [0019], line 1-5). This is also shown at ‘208 Figure 1, in which a plasma gas 34 is surrounded by a quartz tube 32. The tube prevents the plasma gas 34 from actually touching water streams 52,54.

Still further, the preferred embodiment is said to operate at a pressure of about 10 Torr, which is far less than atmospheric pressure. If the plasma generator allowed water steams to flow past an open plasma, that open plasma could not possibly have such a low pressure.

Now, it is true that the ‘208 specification also teaches the possibility of an “open” plasma generator as an alternative embodiment. (‘208 Specification, para. [0020]). But teaching an open plasma generator as an alternative, merely reinforces the teaching of a closed generator as the preferred embodiment.

Thus, one of ordinary skill in the art would read the current specification (and the parent application, which is incorporated by reference) to convey that the current inventors had possession of the concept of running the water streams past waves emitted by the plasma “without subjecting the waste directly to the plasma generated by the RF plasma wave generator”.

**B. Rejection of claims 15-17 and 20 under 35 U.S.C. 112, second paragraph**

The Examiner argued that it is unclear whether the limitation “treating the waste at a rate of at least 20 l/hr” is further limiting the conditions of carrying the waste past the waves radiated by the RF plasma generator. The Applicant disagrees. The language is sufficiently definite.

The test for definiteness under 35 U.S.C. 112, second paragraph, is whether “those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986).

In our case, specification P4/L22-P5/L3 teaches carrying the waste past the waves at a rates that “typically range from 20 l/h to about 2000 l/h”. At least 20 l/hr is taught by the disclosed range.

**CONCLUSION**

The Examiner is ignoring teachings incorporated by reference from the parent application, and is being overly pedantic in applying 35 U.S.C. 112. The rejections should be over-ruled.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Robert D. Fish', is written over a horizontal line.

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## **VIII. CLAIMS APPENDIX**

1 - 11. (Withdrawn)

12. A method of reducing biological contamination in an amount of waste, comprising:  
providing an RF plasma wave generator; and  
carrying the waste past waves radiated by the RF plasma wave generator under  
conditions in which a substantial percentage of the population of a microbe in the  
waste is inactivated or killed, to produce a treated waste; and  
without subjecting the waste directly to a plasma generated by the RF plasma wave  
generator.
13. The method of claim 12 in which the substantial percentage is at least 50%.
14. The method of claim 12 in which the substantial percentage is at least 90%.
15. The method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and  
discharging the treated waste into a navigable body of water.
16. The method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and  
discharging the treated waste into a sewer.
17. The method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and  
discharging the treated waste into a conduit in a municipal waste treatment plant.
18. The method of claim 12, wherein the step of providing an RF plasma wave generator  
comprises operating the generator at a basic frequency of 0.44 MHz – 40.56 MHz.
19. The method of claim 12, wherein the step of providing an RF plasma wave generator  
comprises operating the generator at a modulation frequency of 10-35 kHz.
20. The method of claim 12, further comprising treating the waste at a rate of at least 20 l/hr, and  
wherein the step of carrying the waste past the waves is carried out upon a ship.

**IX. EVIDENCE APPENDIX**

No evidence was submitted pursuant to §§1.130, 1.131, or 1.132.

**X. RELATED PROCEEDINGS APPENDIX**

No related proceedings are known to the applicant.